



# The antecedents and outcomes of the medical tourism supply chain



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## HIGHLIGHTS

- We examine the antecedents and outcomes of the Medical Tourism Supply Chain (MTSC).
- Supply chain coordination and information sharing have a direct effect on organizational performance.
- Lack of collaboration and integration in the MTSC.
- Firms cannot act as independent entities in competition with other firms.

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## ABSTRACT

A model for the medical tourism supply chain with the antecedents and outcomes was developed and empirically investigated in this paper. The theoretical model was tested using Structural Equation Modelling with Partial Least Squares. A self-administered questionnaire was designed and collected from 133 organizations representing various industries that are part of the medical tourism industry in Malaysia. The results show that mutual dependency has the strongest effect of the antecedent variables; and that medical tourism supply chain coordination and medical tourism supply chain information sharing have a direct effect on organizational performance. This paper provides practitioners with guidelines to improve their organizational performance, and ends with recommendations for future study.

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## 1. Introduction

Supply chain management (SCM) is one of the most advantageous management approaches for integrating and coordinating relevant suppliers and producers and business activities to deliver products and services in a timely manner to the end-user (Chen, 2009). Derived from SCM, tourism supply chain (TSC) has introduced a new area of interdisciplinary research: the medical tourism supply chain (MTSC). The TSC is dissimilar to common business supply chains, in that suppliers in the TSC are more complex than in other sectors and compete independently (Chen, 2009). MTSC has a complex structure comprising a network of entities including at least five different sectors identified as being involved in the MTSC – accommodation, chemistry and pharmaceuticals, hospital, transportation, and insurance.

According to Ferrer and Medhekar (2012), many operational objectives discovered in manufacturing supply chains are readily

applicable to the MTSC to a certain extent. Supplier partnerships and strategic alliances, with the objectives of reducing uncertainty and enhancing the control of the supply and distribution channels, are usually formed to increase the financial and operational performance of each channel member. This occurs through a reduction in the total cost and inventory and to increase the sharing of information (Maloni & Benton, 1997). Antecedents for partnerships and alliances for members within the supply chain are a certain level of trust, commitment and dependency to form long-term relationships within a supply chain to increase the competitiveness of the industry as well as the organization itself.

The issues concerning the tourism supply chain have attracted attention and interest from both scholars and practitioners alike. While earlier papers have been published (Chen, 2009; Piboonrungraj & Disney, 2009; Zhang, Song, & Huang, 2009), the study of supply chains in the context of the tourism industry has received little attention, as the published studies mostly have focused on marketing and product development research (Zhang et al., 2009). Furthermore, previous studies concerning medical tourism mostly pertain to developed countries with only a few studies addressing the issues in developing countries. For instance, Piboonrungraj and Disney (2009) determined that half of the

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studies were conducted in Europe and only about one-third of the studies were undertaken in Asia. Asia medical tourists arrivals are expected to exceed 10 million in 2015, with Thailand, India and Singapore forecast to control more than 80% market share (Reportlinker, 2012).

The history of Malaysia's participation in the industry of medical tourism dates back more than a decade to the Asian Financial crisis in 1997, which led to the private healthcare sector targeting foreign customers. Simultaneously, the government realized that the healthcare sector was a worthwhile and feasible venture that must be given support to help overcome the economic crisis (Suleiman, Lye, Yon, Teoh & Alias, 1998). Since then, the Government has provided considerable support and made aggressive efforts to market the medical tourism industry (Dahlui & Aziz, 2011).

Today, Malaysia is among the most preferred prime medical tourism destinations in the world (Ormond, 2011; Dahlui & Aziz, 2011) due to the short waiting period for surgery, a favourable exchange rate, highly qualified medical specialists, state-of-the-art facilities, international credentialed safety and quality services, and affordable medical costs compared to nearby regions (Dahlui & Aziz, 2011). However, Thailand and Singapore are well established with good reputations as medical tourism destinations and still constitute the major regional competitors to Malaysia in its attempt to become the health-services hub in the ASEAN region.

Nevertheless, Malaysia still retains certain advantages over the regional competitors, mainly related to cost factors, and its efforts to continuously improve the medical qualities, services and facilities. In summary, medical tourism in Malaysia has good prospects due to the strong support from the Government, low-cost treatment with high quality medical services, modernization of the healthcare infrastructure to propel medical tourism, and its good reputation and ranking as one of the top medical tourism destinations. According to Heung, Kucukusta, and Song (2011), Malaysia is one of the developing countries that is already actively promoting medical tourism; however, very few studies have been conducted about medical tourism in Malaysia. In addition, the existing articles on the medical tourism supply chain that were empirically tested are limited in nature.

Although the number of healthcare visitors has been increasing, Malaysia lags far behind the neighbouring countries (e.g., Thailand and Singapore) and still is not the most chosen destination for medical tourism (Othman, 2009; Shamini & Puspavathy, 2010). Thus, the MTSC in Asia is an emerging topic, and worthy of further investigation in that the medical tourism industry has been receiving increasing attention, and is emerging as one of the key socio-economic contributors in Asian countries. This paper is among the earliest studies that focus on the MTSC specifically, in that previous studies drivers of the tourism supply chain management (TSCM), and largely ignored the participation of at least five industries involved in MTSC. Hence, this paper enhances the awareness of academics and practitioners in the field of tourism industry as well as provides a clearer understanding of the concept of MTSC in advancing the industry. This study not only offers new insights into tourism and SCM areas but also constitutes the first effort to develop an antecedent and outcome model for MTSC.

The paper is organized as follows. This paper reviews the related literature on MTSC and evaluates the influence of trust, commitment and mutual dependency on organizational performance. The next section discusses the methodology of the integrated analytical framework used for the analysis. The section on findings provides an empirical study in which the theoretical model is divided into two stages – antecedents and outcome – for further examination. The first stage concerns the testing of the relationship between the drivers of MTSC practices and MTSC practices, while the second stage is about the relationship between the MTSC practices and

organizational performance. The end of the paper provides the conclusion, limitations of the study and implications for managers and policy makers alike.

## 2. Literature review

### 2.1. Overview of Tourism Supply Chain (TSC)

According to Page (2011), the tourism industry is different from other industries because the industry comprises a mobile population who visit destination areas to consume a product, service or experience, whereas the supply elements are often fixed geographically at certain places. On the other hand, Chan and Chan (2010) have viewed a supply chain as a network of organizations that are connected from the ultimate supplier(s) to the ultimate customer(s). SCM is one of the most advantageous management approaches that could integrate all the players in the supply chain to deliver goods and services in a timely manner to the respective customers, which has inspired the use of TSCM as an integrating system for the coordination of relevant activities (Chen, 2009). In addition, business management in terms of supply chain in the tourism industry critically needs to increase industrial efficiency, profitability, and ensure sustainability (Piboonrungrroj & Disney, 2009) as the network is being segregated into upstream and downstream, in which both business and non-business entities are involved (Zhang et al., 2009).

Peng, Xu, and Chen (2011) have determined that TSC consists of a series of organizations like attraction providers, transportation and hospitality suppliers, souvenir shops, travel agencies, public sectors and so forth, which supply the goods and services for the tourists. Chen (2009) also stated that TSC is not persistent as the demands of the customers are insatiable and different. These qualities indeed make the industry special in that different suppliers from different sectors supply the products and services (NEAC, 2010).

### 2.2. Medical Tourism Supply Chain (MTSC)

The supply chain plays a vital role in the healthcare industry (Kumar, Ozdamar, & Zhang, 2008). The structure of MTSC is as complex as TSC and requires support from different sectors to provide goods and services to the customers. MTSC is also similar to all other supply chains, such as the manufacturing and service supply chains in that they operate through business-to-business relationships and work together to improve the business operations in the supply chain (Tapper & Font, 2004). The MTSC is a network of entities that organizes, sources, funds, distributes medical services, manages associated information, and finances from manufacturers to medical service delivery points (Ferrer & Medhekar, 2012). Medical costs, waiting time, privacy, and reliability have also been identified as highly important factors that impact MTSC (Ferrer & Medhekar, 2012).

With respect to medical tourism and the supply chain, the MTSC can be described as a supply chain that consists of various members of the medical tourism industry that collaborate with each other to perform a complete medical and holiday service to the user, thereby serving health-care communities, reducing supply chain costs, and increasing efficiencies among suppliers. The collaboration of MTSC members normally consists of five different sectors.

MTSC in developing countries is driven mainly by an increasing availability of high health-care quality at affordable costs, which poses challenges for medical systems in developed countries (Ferrer & Medhekar, 2012). Participants in the MTSC need to understand the factors that contribute to industry growth as well as the demands of medical tourists in order to be chosen by those

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